

REMARKS

Claims 44-49 have been canceled without prejudice, and claims 50 and 112 have been amended without prejudice. As such, claims 39-43 and 50-112 are pending after entry of the present amendment. No new matter enters by way of the present amendment. Moreover, such amendments do not require further search or consideration, remove issues for appeal, and are believed to place the claims in condition for allowance. As such, entry of the present amendment is respectfully requested. Support for the foregoing claim amendment may be found throughout the specification, and in the original claims.

1. Rejections Under 35 U.S.C. § 103(a)

Claims 45-50 and 112 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious over Knauf *et al.* (US 6,426,447). Final Office Action at page 2. In rejecting the claims, the Office asserts that “Knauf et al. teach multiple synthase and thioesterase coding sequences, and also teach how these enzymes function to modify fatty acids, including medium chain fatty acids.” Final Office Action at page 2.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of skill in the art, to modify the reference or to combine reference teachings. Finally, there must be a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

First, Applicants respectfully assert that the Office has failed to establish a *prima facie* case of obviousness because the Office has not demonstrated where Knauf *et al.* provide each element of the presently claimed invention. The synthases of “special interest” according to Knauf *et al.* are from *Ricinus communis* and *Brassica*, not *Cuphea*. Knauf *et al.* at col. 17, lines 45-47. Second, even if Knauf *et al.* teaches all of the claimed elements, the Office has not provided an adequate explanation of the suggestion or motivation to modify Knauf *et al.*. “[A]

patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art.” *KSR Int'l. Co v. Teleflex Inc.*, 127 S.Ct. 1727, 1732 (2007). The Office has not pointed to any evidence to support the statement that “Knauf et al. teach the motivation to use more than one fatty acid modifying enzyme.” Final Office Action at page 2. A bold assertion is not enough to provide basis for a motivation to combine, and Applicants respectfully request that the rejection be withdrawn.

Finally, the Office does not address the expectation of success in modifying Knauf *et al.* That is, the Office has failed to establish that there would have been a reasonable expectation of success in modifying Knauf *et al.* by specifically coordinating synthase factor protein expression with the expression of thioesterase proteins in a plant. The Office argues that it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to transform a plant with both the synthase factor protein coding sequence and at least one thioesterase coding sequence. Office Action mailed November 3, 2006 at page 3. Even if, as the Office asserts, Knauf *et al.* suggested transforming a plant with both the synthase factor protein coding sequence and at least one thioesterase coding sequence, one of ordinary skill in the art would not have the reasonable expectation that the combination would result in an increase of medium-chain fatty acids in transgenic plant seeds relative to the percentage of medium-chain fatty acids produced in seeds expressing only one or more plant-chain-medium thioesterase proteins.

This is further confirmed by the unexpected finding that expression of synthase factor proteins in combination with the expression of thioesterase proteins in plant seeds increases the levels of medium-chain fatty acids over levels obtainable by expression of thioesterase proteins alone. Specification at page 9, line 6 - page 11, line 13 and Example 4. Because the expression of synthase factor proteins in plant seeds alone does not produce detectable levels of medium chain fatty acids, this finding is both surprising and unexpected. *Id.* The Office’s only response to this argument is apparently that “the evidence for non-obviousness is not commensurate with the scope of the claims.” Final Office Action at page 3. As such, after entry of the foregoing amendment, this rejection is moot.

For the foregoing reasons, Applicants respectfully assert that the Office has failed to establish a *prima facie* case of obviousness over Knauf *et al.* Therefore, Applicants respectfully request withdrawal of the rejection of claims 50 and 112 under U.S.C. § 103(a).

2. Claim Objections

Claims 51-53¹ were objected to for allegedly depending on a rejected base claim. Final Office Action at page 3. Applicants respectfully request acknowledgement if the subject matter of claims 51-53 would be allowable if written as independent claims.

CONCLUSION

In view of the above, each of the presently pending claims is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding objection and rejections of the claims, and to pass this application to issue. The Examiner is encouraged to contact the undersigned at (202) 942-5186 should any additional information be necessary for allowance.

Respectfully submitted,



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¹ Claims 51-53 depend from claim 112.